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14. ABSTRACT Partnering Research Involving Mentoring and Education in Prostate Cancer (PRIME) was a partnership between two nursing schools, Duke University School of Nursing and North Carolina Central University (NCCU), an historically black college or university (HBCU). We accomplished our goal to build a collaborative relationship between Duke University and NCCU that brought together students and faculty mentors to facilitate opportunities for underrepresented minority students to learn about prostate cancer. To accomplish this goal, we capitalized on the strengths of both universities to conduct a didactic and hands-on training program to expose undergraduate students to prostate cancer prevention, detection, and control research. The objectives of the PRIME program were to provide undergraduate nursing students with mentored experiential learning to (1) understand the burden of prostate cancer, particularly among African Americans; (2) develop a beginning level of competence in technology resources for information gathering and data management in prostate cancer research; (3) obtain introductory knowledge about the research process (4) gain hands-on experience in community-based prostate cancer control activities; and (5) experience role model development for research and healthcare practice careers, and begin to build networks with researchers and health professionals in a Research I environment. A total of 12 undergraduate nursing students participated in this 10-week prostate cancer research mentored experience. The summer mentorship training was held at Duke University School of Nursing in cooperation with the Duke University Medical Center Division of Urology.					
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## Introduction

This is the final report for Award W81XWH-05-1-0209. The report provides an overview of the program, followed by a report of Statement of Work.

PRIME is a partnership between two nursing schools, Duke University School of Nursing and North Carolina Central University (NCCU), an historically black college or university (HBCU). We accomplished a collaborative relationship between Duke University and NCCU that brought together students and faculty mentors to facilitate opportunities for underrepresented minority students to learn about prostate cancer and prostate cancer research. We met a need for nursing students in HBCU's, and in this instance, North Carolina Central University, to be exposed to prostate cancer prevention, detection, and control research. The Institute of Medicine Report (IOM), *The Nation's Compelling Interest: Ensuring Diversity in the Health Care Workforce*, 2002, addressed the gaps and under representation of minorities in health professions. In particular, the report noted that a change in ethnic and racial demographics of the United States by the year 2020 means there could be an under representation of minorities in health professions, relative to the numbers of minorities in the population, affected by cancer and other chronic diseases.

NCCU is the nation's first state-supported liberal arts college for African American students, and it is a historically black institution. Approximately 89% of the student body identifies themselves as black or African American, 7% as white, non-hispanic, and 5% as other. Faculty identify themselves as 79% black, and 21% white or other. The 103-acre campus is located in Durham in the heart of the oldest section of the community. The NCCU Department of Nursing is 57 years old. More than 500 pre-nursing students in the university identify nursing as their major.

**Specific Aims:** The key to expanding the number of minority health care professionals and eliminating ethnic and racial health disparities related to cancer, including prostate cancer, lies in improving minority youth opportunities to find out about healthcare opportunities early in their education. Ultimately, the exposure will lead to more minorities entering the nursing profession and pursuing graduate programs in advanced practice and research that improve prostate cancer statistics. To accomplish this goal, we capitalized on the strengths of both universities to conduct a didactic and hands-on training program to expose undergraduate students to prostate cancer prevention, detection and control research.

**Objectives:** The objectives of the PRIME program were to provide students with mentored experiential learning to (1) understand the burden of prostate cancer, particularly among African Americans; (2) develop a beginning level of competence in technology resources for information gathering and data management in prostate cancer research; (3) obtain introductory knowledge about the research process (4) gain hands-on experience in community-based prostate cancer control activities; and (5) experience role model development for research and healthcare practice careers, and begin to build networks with researchers and health professionals in a Research I environment.

**Study Design:** For three years, the program consisted of an intense summer program based on concentrated one-to-one mentoring of pre-nursing students by mentors, with didactic, observational, and experiential training in prostate cancer education and research. A key feature of the PRIME program was provision of student mentoring for a beginning understanding of basic research skills. Secondly, career development and role modeling for academic success were strong features of this program.

The PRIME summer mentorship opportunity was advertised to students in the spring of each year who identified nursing as their intended major. Interested students made application to the identified faculty person in the NCCU nursing program. Over three years, a total of 14 students were selected based on the best application essay indicating why the applicant was interested in pursuing mentorship in prostate cancer, a minimum grade point average of 3.0, and no tuition and fee support for college expenses from scholarship sources during the following academic semester. Applicants were screened by the designated faculty at NCCU department of nursing. Face-to-face interviews were conducted by the program principal investigator. Alternates were selected should students who were selected decline the mentorship opportunity. Included in the 14 students was one student who has been selected as an alternate in the program's final year. She was later selected for a semester and summer long mentoring opportunity one day a week.

## **Body**

Across the program years, 12 female students and 2 male students participated in PRIME. Scientific faculty mentors with prostate cancer related research were recruited from among Duke University Medical Center's Research 1 environment. Faculty who participated included:

Duke University Medical Center faculty served as mentors:

- Cathrine Hoyo, PhD, Epidemiologist, Department of Family and Community Medicine  
Two student
- Lisa Campbell, PhD, Clinical Psychologist, Psychiatry and Behavioral Sciences  
One student
- Leon Sun, MD, Urologist, Department of Surgery, Division of Urology  
Seven students
- Patricia Creel, BSN, Nurse, Department of Surgery, Division of Urology  
Two students
- Cary Robertson  
One student
- Thomas Polascik, MD, and Vladimir Mouraviev, Department of Surgery, Division of Urology  
One student

All mentoring faculty are members of the Duke University Medical Center Cancer Prevention and Control Program.

During the 10 weeks the following activities occurred:

- Duke University identification badges and parking permits secured; tour of the Duke University campus, medical center, and nursing school.
- Tour of the medical center library.
- Completion of two Safety, three HIPPA and three Institutional Review Board (IRB) tutorial education tutorial modules prior to access to mentors' databases. Students were required to successfully complete the post-test for each module. Two specific IRB modules were required:
  - Protecting Research Subjects
  - What Counts As Research with Human Subjects

A third module could be selected from among IRB tutorials including:

- Informed Consent for Research
  - Protecting the Confidentiality and Privacy of Research Participants
  - Research in Emergency Settings
  - Social Science Research in a Medical Setting
  - Using Databases in Research
- Library hands-on session on conducting searches of the scientific journal databases. Students learned to conduct searches related to their selected project. The projects were based on the work of their mentors.
- Instruction and practice seminars on how to read and understand research literature.
- Weekly two hour seminars for instruction on writing a research abstract in preparatory for writing an abstract for their own work. With guidance from their mentors, students selected a research project based on the work of their mentors. The seminar sessions also were used for trouble shooting professionalism issues such as any tardiness, requests for leaving before the appointed time, and difficulties adjusting the work load and eight hour work day.
- Hands-on instruction in computer programs: Excel, PowerPoint, and SPSS.
- Direct mentorship by the faculty mentor over the 10 weeks. This included data entry and journal searches. The students shadowed for two days each with one urologist in a urology clinic observing discussions with patients during and after diagnosis for prostate cancer and other urologic disorders, and for follow-up treatment. Students had the opportunity to observe from the operating room theater one or two prostate surgical procedures

- Students attended one Duke University Medical Center Institutional Review Board (IRB) meeting to observe a team of medical center IRB members present and evaluate new and renewal study protocols.
- Final day PowerPoint presentation on each student's project. These were presented to an assembly of mentors, faculty, family members, and friends, followed by a reception in celebration of the students' achievements during the program. Certificates of participation were presented to each student.
- At the end of the program, a paper-pencil evaluation was completed by each student; a face-to-face interview was conducted with each mentor. Feedback from these two evaluations was used in preparation for the subsequent summer.
- September 2007 and 2008, students gained hands-on experience in community-based prostate cancer control activities in Durham, NC. The students assisted with the registration, clinic flow, and consenting process in two day-long prostate cancer screening clinics. Two of the students returned a year later to volunteer in a subsequent prostate cancer screening program.
- Two of the four students attended the one-day 28th Annual Minority Health Conference sponsored by the University of North Carolina School of Public Health, Minority Health Caucus, Chapel Hill, N.C., February 2008.
- Social activities during select evenings and weekends to bond students which facilitated a better study and work environment.

### **Statement of Work**

The Statement of Work has been refined with details of the work to be accomplished for the grantee (Duke University School of Nursing *or Duke*) and the subcontracting party (North Carolina Central University *or NCCU*).

### **STATEMENT OF WORK**

Grant Awarded

Years 1, 2, 3, the following statement of work occurred in each grant year:

Task 1: **NCCU**: Planned for marketing PRIME program to NCCU pre-nursing students

Months 1-3 (*January, February, March of each year*)

- a. Developed plan for recruiting and contacting students.
- b. Selected two graduate student assistants selected to work with program (May through July/August).
- c. Designed applicant qualifications, the application, and interview process.
- d. Marketed and recruited students from among NCCU students who identified nursing as their intended major.

- e. Minimal qualifications: minority student, student availability for the summer program, quality of the program interest essay, and 3.0 minimal Grade Point Average (GPA), and faculty recommendation.
- f. Scheduled interviews at the NCCU Department of Nursing after NCCU prescreening. Face-to-face interviews were conducted by the Duke principal investigator. Final selections were made in consultation with the NCCU faculty counselor.
- g. Planned reception followed for selected students, their faculty, and family members at NCCU Department of Nursing.
- h. Planned mentoring contact schedule for fall and spring semesters with students and their home campus faculty adviser. Students met with their faculty adviser at least once each subsequent semester.

Task 2: Months 4-5 (April, May)

- a. **NCCU**: Reviewed ongoing NCCU mentoring schedule (April).
- b. **NCCU**: Validated GPAs for applicants. Monitored end of semester GPA for previous year's program students.
- c. **DUKE**: Recruited mentors and refined schedule for 10-week summer program.
- d. **DUKE**: Conducted 10-week summer program (May through July).
- e. **NCCU**: Worked on process with home campus grants office to facilitate students monthly stipends.

a. Task 3: Months 6-9 (June, July, August, September)

- b. **DUKE**: Students worked with mentors.
- c. **DUKE**: Ongoing meetings with research faculty and graduate student assistants.
- d. **DUKE**: Engaged in workshops and seminars.
- e. **DUKE**: Students prepared abstracts based on their summer projects. End of program presentations session conducted. Final day presentations attended by mentors, faculty, family, and other guests.
- f. **DUKE**: Conducted evaluation and wrap-up, and student evaluations.
- g. **DUKE**: Face-to-face mentor evaluations were obtained.
- h. **DUKE**: Program administrative tasks.
- i. Obtained tuition amount from NCCU (the home school) and designated amount to be paid towards fall tuition. Tuition paid for instate rate only – subject to that allowable by original budget and annual budget revisions.

Task 4: **NCCU**: (September) Coordinated student volunteer activity for two-day free community prostate cancer education and prostate cancer screening clinic at Lincoln Community Health Center, Durham, and Duke University Medical Center. These were held on the third Saturday and Sunday in September annually across the program years.

Task 5: Months 10-12 (October, November, December)

- a. **NCCU**: Documented GPA at end of fall semester-students were required to maintain 3.0 overall GPA throughout program, if student fell behind, one time January stipend bonus was not awarded. Eight of the twelve students received the stipend bonus. Two students withdrew from school during the fall semester, and



the last student selected to mentor across the spring and summer 2008 was not offered the stipend bonus.

Task 6: **DUKE**: Overall program evaluations and submission to DOD in Month 12.

Task 8: Final project evaluation in Year 3.

Undergraduate students are less likely to have been exposed to information about prostate cancer, its incidence and mortality. Through this one-one mentorship, students were educated on background information and research on morbidity and mortality for prostate cancer, and diagnosis and treatment including surgical intervention, and the ethnic, racial disparity for the disease. Students' grasp of a sophisticated understanding of a complex disease was accomplished. Consequently, during and by the end of the summer, they were able to communicate at an impressively high intellectual level with their mentors and other scientists with whom they had the opportunity to discuss prostate cancer and the students mentored research.

#### **Key Research Accomplishments:**

The students developed abstracts based on their summer research and made oral presentations at the School of Nursing for the final day of the summer program:

#### Summer 2005

- Kamah Killen under the mentorship of Cathrine Hoyo, PhD:  
Epidemiologist, Department of Family and Community Medicine  
"Genetics, Age, Race, Body Size, and IGFs: How Do They Relate to Prostate Cancer?"
- Keisha Moore under the mentorship of Cary N. Robertson, MD, Urologist, Department of Surgery, Division of Urology  
"The quality of life after a Prostatectomy"
- Sheree Boykin under the mentorship of Leon Sun, MD, Urologist, Department of Surgery, Division of Urology  
"Positive Surgical Margins Association with Prostate Cancer Reoccurrence"
- Phylicia Echols under the mentorship of Leon Sun, MD, Urologist, Department of Surgery, Division of Urology  
"The Association of Race on Prostatic Specific Antigen (PSA) Velocity and PSA Doubling Time Prior and Post Radical Prostatectomy"
- Taylor Ferguson under the mentorship of Leon Sun, MD, Urologist, Department of Surgery, Division of Urology  
"The Epidemiology of Prostatic Biopsies and Prostate Cancer Detection"

#### Summer 2006

- Shunyoung Smith, rising junior, under the mentorship of Cathrine Hoyo, Ph.D., Epidemiologist, Duke University Medical Center, Department of Family and Community Medicine:  
“Association Between Inflammatory Markers and Prostate Carcinogenesis: A Meta-Analytic Review”
- Ashton Fearington, rising sophomore, under the mentorship of Lisa C. Campbell, Ph.D., Assistant Professor, Duke University Medical Center, Psychiatry and Behavioral Sciences:  
“Comorbid Medical Conditions and Post-Treatment Quality of Life in African American Prostate Cancer Survivors”
- Kenneth Joseph, rising junior, under the mentorship of Leon Sun, MD, Urologist, Department of Surgery, Division of Urology:  
“The Differences between African-Americans and Non-African Americans With Regard to Prostate Specific Antigen From The PSA Era to Present”
- Alisha Childs, rising junior, under the mentorship of Leon Sun, MD, Urologist, Department of Surgery, Division of Urology:  
“The Effects of Age and Race on Gleason Score and Tumor Stage”

#### Summer 2007

- Michael Bannister, rising junior, under the mentorship of Thomas Polascik, MD, and Vladimir Mouraviev, MD, Urologists, Department of Surgery, Division of Urology  
“ProstaScint- The New Wave of Prostate Cancer Detection”
- Sharhonda Harvey, rising junior, under the mentorship of Ms. Patricia Creel, RN, Department of Surgery, Division of Urology: “Do RECIST or WHO Criteria Give a More Accurate Assessment of Treatment Response in Solid Tumors?”
- Tynece Buggs, rising junior, under the mentorship of Ms. Patricia Creel, RN, Department of Surgery, Division of Urology: “Why Can’t I Drink Grapefruit Juice? The Effects of Grapefruit Juice on Drug Metabolism”.
- Shannette Thomas, rising junior, under the mentorship of Leon Sun, MD, Urologist, Department of Surgery, Division of Urology: “Clinical Predictors for Positive Prostate Biopsies”.

#### Summer 2008

- Aiqun Yu, junior, under the mentorship of Leon Sun, MD, Urologist, Department of Surgery, Division of Urology: Aiqun completed a one-one mentorship over the spring and summer semesters 2008. She had been selected as an alternate for the Summer 2007 students. A mentored offered to include her and she was added for a solo mentorship in

January 2008. She learned data entry on prostate cancer studies and learned about informed consent, serving as the clinic assistant who explained the consent form for specific studies to potential participants. She was not required to write an abstract or present.

### **Reportable Outcomes:**

Successful completion of the mentorship program for 12 students; 10 were enrolled back in their home campuses for the fall semester following program participation. Two students subsequently withdrew from school due to family obligations. Four students changed their majors from nursing to health education during the subsequent semester following the PRIME summer program participation. Overall, ten students continued in college and maintained a 3.0 GPA; six are continuing in the nursing major with high interest in patient care and research. Three have expressed high interest in graduate school. All of the students were involved in PRIME early in their academic matriculation. The first student to reach graduation eligibility for the Bachelor of Science (BSN) in nursing degree will graduate in December 2008. Three students are scheduled to graduate with the BSN nursing degree in May 2008.

Select students submitted abstracts and presented posters and were involved in the full conference activities:

Intercultural Cancer Conference hosted by Baylor University, held in Washington, DC, March 2006

Kamah Killen

“Genetics, Age, Race, Body Size, and IGFs: How Do They Relate to Prostate Cancer?”

- Keisha Moore  
“The quality of life after a Prostatectomy”
- Sheree Boykin  
“Positive Surgical Margins Association with Prostate Cancer Reoccurrence”

U.S. Department of Defense IMPact Conference, Atlanta, 2007, September 2007

- Michael Bannister, “ProstaScint -The New Wave of Prostate Cancer Detection”
- Sharhonda Harvey, “Do RECIST or WHO Criteria Give a More Accurate Assessment of Treatment Response in Solid Tumors?”

Duke University Comprehensive Cancer Center, Annual Research Conference, April 2008

- Michael Bannister<sup>1</sup>, Thomas Polascik<sup>2</sup>, Vladimir Mouraviev<sup>2</sup>, Janice Mayes<sup>2</sup>, Seronda Jackson<sup>1</sup>, Diana Tyson<sup>3</sup>, Ashley Wilson<sup>3</sup>, Marva Price<sup>4</sup>, “ProstaScint: What Will We Tell Our Patients?”

<sup>1</sup>North Carolina Central University, <sup>2</sup>Duke University Medical Center Prostate Center, <sup>3</sup>Duke University Psychology and Neuroscience, <sup>4</sup>Duke University School of Nursing

Michael's poster won a \$100 prize, judged against physicians, including house staff, residents, and fellows.

Annual Nursing Research Conference, North Carolina Central University Department of Nursing, April 2008

- Michael Bannister  
“ProstaScint- The New Wave of Prostate Cancer Detection”
- Sharhonda Harvey “Do RECIST or WHO Criteria Give a More Accurate Assessment of Treatment Response in Solid Tumors?”
- Tynece Buggs “Why Can't I Drink Grapefruit Juice? The Effects of Grapefruit Juice on Drug Metabolism”.

PI's presentation:

Price, M.M. (2005, June). “Partnering Mentoring and Education in Prostate Cancer Control”, Cancer Prevention and Detection Dissemination Colloquium, invited, podium presentation as outcome of the National Cancer Institute and Oncology Nursing Society grant collaboration, Chicago.

**Conclusions:**

**Program Evaluation:**

Across the three years, the PRIME program was highly successful in achieving its goals. Students' evaluation feedback indicated that they had been well-exposed to health care research, an area they had not been involved in before. They felt that they had learned a great deal from their mentors. Further, parts of their mentored experience will be applicable in improving their understanding of nursing and health care research in their academic programs and future nursing and allied health careers.

These students were engaged in a concentrated 10-week mentored summer research program. All of the students were at similar levels of unexposure to cancer research and all had the potential and the opportunity to gain a great deal from the internship. Most of the experiences and activities were completely new for the participants. They had no research training in a particular area; nor had they been exposed to information on the prostate. Thus, this program was able to provide a learning experience and address student needs that may not be addressed elsewhere or at any other time in their academic career. Furthermore, we were very successful in meeting the proposed goals of the program and in some areas even reaching beyond our predetermined expectations, particularly with the amount of materials on the prostate and research that the students were able to learn and understand. During their final presentations students addressed a wide audience of Duke and NCCU faculty and community members, engaging in a discussion of the ways in which prostate cancer can be controlled through proper screening and early detection, and research methodology.

**The goals for this program were to help student learn to:**

**(1) Understand the burden of prostate cancer, particularly among African Americans**

Students presented their research projects on the final day of the internship. All of the presentations adequately highlighted the importance of prostate cancer research by addressing the affect this type of cancer has on the population and the higher risk of prostate cancer among African-Americans.

**(2) Develop a beginning level of competence in technological resources for information gathering and data management in prostate cancer research, and writing about and presenting the research.**

The students performed their own literature searches for background information with which to form their hypotheses. For their final presentations, all of the students learned how and wrote up a full abstract. Basics of manipulating the SPSS data analysis program were taught.

Students were instructed in the use of PowerPoint as a tool for presenting their research. As a final project, all students completed PowerPoint presentations.

We can be confident that all of the students left this program with at least a beginning level of competence in all of our goal areas. Although the students still have a large learning curve in developing the skills learned throughout the internship, they were most likely ahead of their peers going into the next year of the undergraduate nursing program.

**(3) Acquire an introduction to the research process through a mentored independent research project addressing some aspect of prostate cancer control, work with the Duke mentor's prostate cancer research, and observations and interactions with research faculty at Duke University Medical Center.**

All of the students worked closely with a mentor who was involved in prostate cancer research. Each student left the internship with a very good understanding of what their mentors research was about and what purpose it served. In addition to their primary mentors, students were advised by two graduate student assistants from the Duke medical center environment. On-site shadowing with urologic surgeons in a clinical setting occurred. In addition, students meet with the nursing team in the Urology clinic.

Students observed an institutional review board meeting to learn about clinical trials and research management in a university setting. This meeting was of particular interest, as their advisors were conducting primary research that had been reviewed by the IRB committee. Attending the meeting allowed students to gain knowledge

concerning the extensive preparation that goes into conducting clinical trials, particularly with sensitive research populations such as African American males.

**(4) September 2006 & 2007: gain hands-on experience in community-based prostate cancer control activities**

The students participated in the free prostate cancer screening program held at the Lincoln Community Center and Duke University Medical Center, both in Durham, North Carolina. Approximately 500 men participated in the annual free screening clinics each year.

**5) Experience role model development for research and healthcare practice careers, and begin to build networks with researchers and health professionals in a major university environment**

Students were given the opportunity to build networks with their mentors and research staff in their immediate environment. Exposure to different research and clinical faculty helped them build networks and find other researchers with whom they would want to keep in close contact. The PRIME program has the potential to help student form long standing mentorship relationships.

**Unexpected Difficulties Encountered:**

Initially, students do not expect the intensity of the program and their mentor's on task research demands. Giving full attention for a full day in the academic environment in a research intensive institution was a behavior that had to be understood and adjusted to by all four students.

Personal and family issues interfere with the older student adult learners. These students are motivated to return to college to advance their degrees to a more compatible career, but encounter family issues that slow or interfere with the academic process. More time must be spent with the older, more mature students.

**So What**

We believe that we have developed an excellent undergraduate research training model that developed basic prostate cancer research skills and laid a foundation for intellectual inquiry. Moreover, students learned the scientific value of research to prostate cancer control. Most of the students left the summer program wanting to attend graduate school to be prepared for some aspect of research in future careers. Students in the PRIME program entered in their rising sophomore or junior years. None of the students has graduated yet. The PI maintains contact with the students to provide continued academic encouragement, and offers opportunity for them to return to the PI's campus for select enrichment and hands-on activities periodically in the subsequent academic years.

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- Ransohoff, D.F., McNaughton Collins, M., Fowler, F.J. author reply. (2003). Why is prostate cancer screening so common when the evidence is so uncertain? A system without negative feedback. *American Journal of Medicine*, 1;114 (8), 706.
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- Weinrich, S. (2001). The debate about prostate cancer screening: what nurses need to know. *Seminar in Oncology Nursing*, 17 (2), 78-84.
- Whittemore, A.S., Kolonel, L.N., Wu, A.H., John, E.M., Gallagher, R.P., Howe, G.R., Burch, J.D., Hankin, J., Dreon, D.M., West, D.W., et al. (2005). Prostate cancer in relation to diet, physical activity, and body size in blacks, whites, and Asians in the United States and Canada. *J Natl Cancer Inst*. 87: 652-661.

**DUKE UNIVERSITY MEDICAL CENTER  
CURRICULUM VITAE**

Date Prepared: August 2008

Name (complete with degrees): Marva L. Mizell Price, DrPH, MPH, FNP, FAAN

Primary academic appointment: School of Nursing

Primary academic department: School of Nursing

Secondary appointment (if any) – (department): Duke University Comprehensive Center  
Cancer Center, Prevention and Control

Social Security number: xxx-xx-2343

Present academic rank and title (if any): Assistant Professor

Date and rank of first Duke Faculty appointment:  
July 1, 1996 Clinical Assistant Professor; Assistant Professor July 1, 2001

Nursing Licensure: North Carolina Registered Nurse

Date of License (Month/Day/Year): August 1972; renewal – November 30, 2008

Specialty certification(s) and dates (Month/Day/Year):

St. Margaret's Hospital, Boston: Natural Family Planning Instructor, 1988.

American Nurses Credentialing Center (ANCC): Family Nurse Practitioner, Issued 1982;  
recertified 2007.

North Carolina Medical Board of Nursing: Family Nurse Practitioner, Initial Approval 11/  
1974; Reapproved 2007.

Re-credentialed by Duke University Medical Center Credentialing Service, 2007

Date of birth: 11-25                      Place: Columbia, N.C. USA

Citizen of: USA

Visa status (if applicable): N/A

<b><u>Education</u></b>	<b><u>Institution</u></b>	<b><u>Date (Year)</u></b>	<b><u>Degree</u></b>
High School	Tyrrell High School Columbia, NC	1968	Diploma
College	School of Nursing North Carolina Agricultural & Technical State University Greensboro, NC	1972	Bachelor of Science in Nursing (B.S.N.)
Graduate or Professional School	School of Public Health, Department of Maternal and Child Health, University of North Carolina, Chapel Hill, NC	1974	Master of Public Health (M.P.H.) in Maternal Child Health
	School of Nursing University of North Carolina, Chapel Hill, NC	1974	Family Nurse Practitioner Certificate
	School of Nursing University of Washington, Seattle, Child Development and Mental Retardation Center	1979	Post-Masters Certificate in Developmental Pediatrics
	School of Public Health, Department of Maternal and Child Health and Program in Public Health Leadership,	1997  1995-1997	Doctor of Public Health (Dr.P.H). in Maternal and Child Health and Public Health Leadership

University of North  
Carolina,  
Chapel Hill, NC

Predoctoral Fellow,  
Cancer Prevention  
and Detection:  
University of North  
Carolina Lineberger  
Comprehensive  
Cancer Center,  
Chapel Hill

**Scholarly Societies/Awards:**

1973- present	Invited, Delta Omega Honor Society in Public Health
1974- present	Invited and Inducted, Sigma Theta Tau, Alpha Alpha Chapter, International Honor Society in Nursing; Junior and Senior Counselor, 1978-1980
1993	Great 100 Award For Nursing Excellence In North Carolina for Outstanding Contributions to the Profession of Nursing
1995-1996	Albert Schweitzer Fellowship
1995-1997	Lineberger Comprehensive Cancer Center, University of North Carolina, Pre-Doctoral Fellowship
1995	American Nurses Association Ethnic Minority Fellowship, accepted without funding
1996- present	Inducted, Charter Member, Sigma Theta Tau, Mu Tau Chapter, International Honor Society in Nursing
1996	Alumni Student Award, UNC School of Public Health, awarded at the UNC School of Public Health Annual Alumni Conference
1997	Community Health Nurse of the Year, North Carolina Nurses Association
2002- present	Invited and Inducted, Fellow, American Academy of Nursing
2005	American Academy of Nurse Practitioners State Award for Excellence
2007	Invited and inducted, Fellow of the American Academy of Nurse Practitioners

**Professional training and academic career:**

<u>Institution</u>	<u>Position/Title</u>	<u>Date</u>
<b>Post-Baccalaureate:</b>		
Annie Penn Memorial Hospital Reidsville, NC	Registered Nurse Rotated on all services in a 120 bed community hospital (Medical/surgical, ER, Delivery Room, Pediatrics, Recovery Room)	1972-1974
<b>Post-Master's:</b>		
University of North Carolina, School of Public Health, Department of Public Health Nursing for Orange Chatham Comprehensive Health Services, Chapel Hill, NC	Family Nurse Practitioner	1974

University of North Carolina Employees Health Services, Chapel Hill, NC	Family Nurse Practitioner	1974-1976
University of North Carolina, Chapel Hill, NC Division for Disorders of Development and Learning (currently Center for Development and Learning)	Family Nurse Practitioner	1976-1982
State of North Carolina Department of Health and Human Services, Winston Salem & Raleigh, NC	Family Nurse Practitioner and Nursing Consultant, Family Planning and Women's Health, Division of Maternal Child Health	1982-1991
Duke University Medical Center, Durham, NC Department of Obstetrics and Gynecology, Division of GYN Oncology	Family Nurse Practitioner and Program Coordinator, Women's Cancer Screening Program & Cervical Dysplasia Private Clinic	1991-1994
Chatham County Health Department Pittsboro, NC	Interim Health Director	1992
Kaiser Permanente Durham-Chapel Hill Office, NC	Chief Executive Officer Family Nurse Practitioner	1994
Randolph County Health Department, Family Planning Clinic, Asheboro, NC	Family Nurse Practitioner	1996
<b>Post-Doctorate:</b>		
Duke University School of Nursing, Durham	Clinical Assistant Professor	1996-2001
Family Nurse Practitioner Program	Assistant Professor	2001-
Family Nurse Practitioner Program Program/Specialty Director		May 2002-2007
<b>Publications:</b>		
<b>1. Refereed journals:</b>		

1. **Price, M.M.** (1980). Critique of the Milani-Comparetti Motor Development Screening Test. Physical And Occupational Therapy In Pediatrics, 1 (1), 59-68.
2. Smith, E.M., Phillips, J.M., & **Price, M.M.** (2001). Screening and early detection among ethnic minority women. Seminars in Oncology Nursing, 17 (3), 159-170.
3. Van Buren, K.G. & **Price, M.M.** (2002). Recognizing Obstructive Sleep Apnea in Children. The American Journal for Nurse Practitioners, 6(7), 9-17.
4. Brown, S.M. & **Price, M.M.** (2003). Man with swollen lips and tongue. Clinician Reviews, 13 (4): 81-86. (*Ace-Inhibitors for Hypertension*)
5. National Organization of Nurse Practitioner Faculty (NONPF) Practice Doctorate Task Force: Marion, L., Viens, D., O'Sullivan, A.L., Crabtree, K., Fontana, S. **Price, M.** (2003). The Practice Doctorate in Nursing: Future or Fringe? NONPF Practice Doctorate Task Force. Topics in Advanced Practice Nursing eJournal 3 (2), 2003. © 2003 Medscape.
6. Marion, L., O'Sullivan, A.L. Crabtree, M. K., **Price, M.** Fontana, S. (2005). Curriculum Models For The Practice Doctorates In Nursing. Medscape. Topics in Advanced Practice Nursing eJournal 5 (1), 2005. © 2005 Medscape.
7. **Price, M.M.**, Hamilton, R.J., Robertson, C.N., Butts, M.C., Freedland, S.J. (2008). Body Mass Index, Prostate-Specific Antigen, and Digital Rectal Examination Findings Among Participants in a Prostate Cancer Screening Clinic. Urology. 2008 May;71(5):787-91. Epub 2008 Feb 11. PMID: 18267334.
8. Schroeck, F.R., Krupski, T. L., Sun, L., Albala, D.M., **Price, M. M.** , Polascik T.J., Robertson, C. N. Robertson, Tewari, A. K, and Moul, J.W. "Satisfaction and Regret after Open Retropubic or Robot-Assisted Laparoscopic Radical Prostatectomy". Urol. 2008 Oct; 54(4):785-93. Epub 2008 Jun 23. PMID: 18585849.

## 2. Non-refereed publications:

1. **Price, M.M.** (1980). Why do they suck their thumbs? Baby Talk, 46 (5), 28-29.
2. **Price, M.M.** (1982), Thumbsucking, Pediatric Currents, 31 (1).
3. **Price, M.M.** (1985, April 7; 1980, October 5). Thumb, finger sucking common behavior in caring for kids, Chapel Hill Newspaper.
4. **Price, M.M.** (1986). Nurse practitioners are also caught in national malpractice insurance crunch, Contraceptive Technology Update, American Health Consultants: Atlanta, 7 (11), 138-139.
5. **Price, M.M.** (1987). OC user's recurrent candidiasis may require multiple treatment strategies, Contraceptive Technology Update, American Health Consultants: Atlanta, 8 (1), 9-11.
6. **Price, M.M.** (1987). Nurse practitioner has complex role in managing high-cholesterol patients, Contraceptive Technology Update, American Health Consultants: Atlanta, 8 (4), 49-50.
7. **Price, M.M.** (1987). Help long-term OC users manage healthy, gradual return to fertility, Contraceptive Technology Update, American Health Consultants: Atlanta, 8 (6), 82-83.
8. **Price, M.M.** (1987). Try varied approaches to encourage our OC patients to stop

smoking, Contraceptive Technology Update, American Health Consultants: Atlanta, 8 (8), 101-103.

**Price, M.M.** (1987). North Carolina's NFP initiative is effective and well received, Contraceptive Technology Update, American Health Consultants: Atlanta, 8 (10), 133-134.

10. **Price, M.M.** (1987). Physically, mentally disabled teens require special contraceptive care, Contraceptive Technology Update, American Health Consultants: Atlanta, 8 (12), 154-156.

**Price M.M.** (1988). Find alternatives for patients using 80 to 100 mcg estrogen OCs. Contraceptive Technology Update. 9 (7): 86-87.

11. **Price, M.M.** & Price, L.N. (2002). Concerns of white and African American consumers about colon cancer screening. In M. Kowalski (Ed.). Transcultural Nursing Special Interest Newsletter – Oncology Nursing Society. 12 (1), 1-3.
12. **Price, M.M.** & Price, L.N. (2002). Concerns of white and African American consumers about colon cancer screening. Prevention and Detection Special Interest Newsletter – Oncology Nursing Society. 12 (3), 1-3.
13. **Price, M.**, Flagler, S., Honig J., Huffstutler, S., Lock, S., and Stegbauer, C. (2006). Recommendations for Faculty Qualifications, Faculty Development, and Student Admissions Criteria. Retrieved October 9, 2006, from the National Organization of Nurse Practitioner Faculties Practice Doctorate Resource Center Web site:  
<http://www.nonpf.com/NONPF2005/PracticeDoctorateResourceCenter/PDsubcommittee1.htm> &  
<http://www.nonpf.com/NONPF2005/PracticeDoctorateResourceCenter/PDResourceCenter.htm>

## **2. Chapters in books:**


1. **Price, M.M.** (1980). Special Populations Sexual Abuse of the Developmentally Disabled. In D. Kay, Leadership Training Workshops. Bethesda: National Institute of Mental Health, National Center for Prevention and Control of Rape. Training Grant No. T31MH15664.
2. **Price, M.M.** (1985). Nursing Care of the Child With A Mental Deficiency. In S.R. Mott, N.S. Fazekas, & S.R. James, (Eds.), Nursing Care of Children and Families, pp. 755-783, Menlo Park, CA: Addison-Wesley Publishing Co.
3. Phillips, J. **Price, M.M.** (2002). "Breast Cancer Prevention and Detection: Past Progress and Future Directions". In K. Jennings-Dozier & S. Mahon, S. (Eds.), Cancer Prevention, Detection and Control: A Nursing Perspective. Pittsburgh, PA. Oncology Nursing Press.
4. **Price, M.M.** (2002). Health Promotion with African American women. In C.C. Clark, Health Promotion in Communities: Holistic and Wellness Approaches, pp. 355-381, New York: Springer Publishing Company.

## **3. Books: N/A**

## **4. Non-authored publications (contributions noted in author's acknowledgements):**

1. Public Sector NFP Program, (1988). The NFP Reader, 5 (1), Bethesda: KM Associates.
2. Nurses, physicians prefer different postpartum prescriptions practices, Contraceptive



- Technology Update, (1986). American Health Consultants: Atlanta. 7 (9).
3. f- Exams Key to Detecting Cancer In Men, Duke Center for Integrative Medicine, The Herald Sun, August 7, 2003.
  4. Cancer Seminars to Open Today, The Herald Sun, January 30, 2004.
  5. Health Articles: First Hand: Marva Price, DrPH, RN, FAAN, Family Nurse Practitioner and Director, Family Nurse Practitioner Specialty at the Duke University School of Nursing, from Cancer Center Notes, Duke Health.Org., 4/10/2007.
  6.  **SCIENCE : PHYSICS : TECH : NANO : NEWS**. Overweight and obese men have lower PSA values, even before they get prostate cancer. Published: 11:58 EST, February 19, 2008
  7. Innovations Report, Forum für Wissenschaft, Industrie und Wirtschaft. Overweight and obese men have lower PSA values, even before they get prostate cancer. 21.02.2008.
  8. Bio-Medicine. Overweight and obese men have lower PSA values, even before they get prostate cancer, February, 19, 2008.
  9. Medical News Today. Lower PSA Values Found In Overweight And Obese Men, Even Before Diagnosis Of Prostate Cancer, 20 Feb 2008 - 3:00 PDT.
  10. The "New" Prostate Cancer InfoLink, This web site is a service of Prostate Cancer International. Satisfaction and regret after two types of radical prostatectomy. Posted on July 8, 2008 by E. Michael D. ("Mike") Scott.  
<http://prostatecancerinfoLink.net/2008/07/08/satisfaction-and-regret-after-two-types-of-radical-prostatectomy/>
  11. The New York Times, Well, On Health by Tara Parker-Pope, Regrets After Prostate Surgery, Sunday, September 21, 2008.  
<http://well.blogs.nytimes.com/2008/08/27/regrets-after-prostate-surgery/>
  12. Technorati, Inc. Technorati, Japan. Kevin, M.D. - Medical Weblog. Reactions to story from Well - Tara Parker-Pope - Health - New York Times Blog, Regrets After Prostate Surgery.  
<http://technorati.com/posts/6VTj7VSvaFNXAgEZ6r36BfJyZ74vqYnK8kEjZPRrLt0%3D>.
  13. Topix, Durham, N.C. Regrets After Prostate Surgery. Published: Wednesday, August 27, 2008 at 9:00 a.m. Last Modified: Thursday, August 28, 2008 at 4:25 a.m.  
<http://www.topix.com/health/prostate-cancer/2008/08/regrets-after-prostate-surgery>.
  14. vBulletin®, Regrets After Prostate Surgery (NYT). 09-11-2008, 09:34 PM  
<http://www.eunuch.org/vbulletin/showthread.php?s=65edcc9fc11a0ec030c87c270d6d3a05&p=111186#post111186>.
  15. Propeller, Regrets After Prostate Surgery.  
<http://www.propeller.com/story/2008/08/27/regrets-after-prostate-surgery/>

## 5. Other Materials:

### a. Published scientific reviews (for mass distribution):

#### Book Reviews:

1. **Price, M.M.** (1983). Effectiveness of pediatric primary care. J. S. O'Shea & E.W. Collins, (Eds.), in Physical And Occupational Therapy in Pediatrics.
2. **Price M.M.** (1986). Diagnosis and management of the hospitalized child. H.B. Levy, S.H. Sheldon, & R.F. Sulayman (Eds.), in Physical and Occupational Therapy in Pediatrics, 6 (1), 109-110.
3. Lederer, et al. (1986). Care planning pocket guide. Ed 2. Menlo Park, CA: Addison-Wesley.
4. **Price, M.M.** (1986). Minimizing high-risk parenting. R.A. Hoekelman & P.A. Media (Eds.), in Physical and Occupational Therapy In Pediatrics, 6 (2), 125-126.
5. **Price, M.M.** (1987). Chronically ill children and their families. N. Hobbs, J.M. Perrin, & H.T. Ireys (Eds.), in Physical And Occupational Therapy In Pediatrics, 7 (3), 107-108.
6. **Price, M. M.** (1988). Children with handicaps: A medical primer. Ed 2. M.L. Batshaw & Y.M. Perret (Eds.), in Physical And Occupational Therapy in Pediatrics, 8 (1), 117-118.
7. **Price, M.M.** (1989). The invulnerable child. E.J. Anthony & B.J. Cohler (Eds.), in Physical And Occupational Therapy In Pediatrics, 9 (3), 160-161.
8. Scoggin, J. & Morgan, G. (2001). Practice gudidelines for obstetrics and gynecology. Baltimore: Lippincott, Williams & Wilkins.

#### **b. Selected Abstracts:**

1. **Price, M.M.** (1986, May). "Nurse Practitioner Prescribing Practices", Paper presented at the Annual Conference on Women's Health for Nurse Practitioners, Emory University, Atlanta
2. **Price, M.M.** (1988, May). "Helping Family Planning Patients Stop Smoking", Paper presented at the Annual Conference on Women's Health for Nurse Practitioners, Emory University, Atlanta
3. **Price, M.M.** (1989, May). "Is There an Ideal Contraceptive for the Breastfeeding Woman?" Paper presented at the Annual Perinatal Nursing Conference, Duke University Medical Center, Durham, NC
4. **Price, M.M.** (1993, February). "Cancer Prevention and Early Detection – Changing Lifestyles in Vulnerable Populations", Paper presented at the Health Promotion Disease Prevention Nursing Conference, Friday Conference Center, University of North Carolina School of Nursing, Chapel Hill
5. **Price, M.M.** (1994, April). "Cancers That Worry Women the Most and Screening Dilemmas", Paper presented at the Annual Spring Symposium for Primary Care Nurse Practitioners, Charlotte.
6. **Price, M.M.** (1994, October). "Developing and Using Computer Generated Slides for Oral Presentations", Paper presented at the Dissemination Workshop during the Oncology Nurses Symposium on Cancer in African Americans, Atlanta.
7. **Price, M.M.** (1994, October 28-30). "Living with Genital Herpes: Counseling the Patient", Paper presented and Seminar Moderator for the Burroughs Wellcome Pharmaceutical Corporation Nursing Conference on Genital Herpes, Research Triangle Park, NC.
8. **Price, M.M.** (1995, April, Miami; 1995, March, Washington, DC; & 1995, February, Philadelphia). "Breast Health", Papers presented at the National Black Nurses

- Association Regional Conferences.
9. **Price, M.M.** (1995, August). "Gynecologic Cancers-Cervical Cancer", Paper presented at the National Black Nurses Association National Conference, Washington, DC.
  10. **Price, M.M.** (1996, August). "Cervical Cancer", Paper presented at the Oncology Nursing Society Post-Conference Seminar at the Annual Meeting of the National Black Nurses Association, Chicago.
  11. **Price, M.M.** (1997, May). "What Your Mother Needs to Know about Breast Health, Paper presented at the 9<sup>th</sup> Annual National Black Graduate Student Conference, Research Triangle Park, NC.
  12. **Price, M.M.** (1997, August). "Cervical Cancer", Paper presented at the North Carolina Baptist Ushers Conference on Cancer Prevention, UNC Lineberger Comprehensive Cancer Center and the UNC School of Public Health Summer Public Health Conference, Raleigh, NC.
  13. **Price, M.M.** (1997, August). "Intergenerational Influences on Cervical Cancer Screening", Poster Session presented at the Women's Health Issues – A Global Nursing Perspective, University of Cincinnati, St. Thomas, Virgin Islands.
  14. **Price, M.M.** (1997). Generational Influences on Cervical Cancer screening and the capacity of the public health system to assure responsive Services. Dissertation Abstracts International, University of North Carolina, Chapel Hill. Microfiche No. W4.P9462. 1997.
  15. **Price, M.M.** (1998, August). "Intergenerational Influences on Cervical Cancer Screening", Paper presented at the 11<sup>th</sup> Union of International Cancer Congress, Rio de Janeiro, Brazil.
  16. **Price, M.M.** (1999, April). Enhancing nurse educators' knowledge base to teach their students cancer prevention and early detection in African Americans; and Using the Albert Schweitzer fellowship program to foster cross-cultural experiences for nurse practitioner students. Symposium conducted at the annual meeting of the National Organization of Nurse Practitioner Faculties (NONPF), San Francisco.
  17. **Price, M.M.** (1999, November). "African American Women's Concerns about Cervical Cancer Screening", Paper presented at the American Public Health Association Annual Convention, Chicago.
  18. **Price, M.M.** (2000, February). "African American Women's Concerns about Cervical Cancer Screening", Paper presented at the 7<sup>th</sup> Biennial Symposium on Minorities, The Medically Underserved & Cancer, Addressing the Unequal Burden of Cancer, Washington, DC. Published Abstract p. 41.
  19. **Price, M.M.** (2000, March). "African American Women's Concerns About Cervical Cancer Screening", Paper presented at the Howard University School of Nursing Research Day, Washington, DC.
  20. **Price, M.M.** (2000, April). "Creating a Faculty Research Opportunity with a Community Prostate Cancer Screening Program", Paper presented at the National Organization of Nurse Practitioner Faculties (NONPF) 26<sup>th</sup> Annual Conference, Washington, DC.
  21. **Price, M.M.** (2000, August 3; July 30). "Follow-up of Men Who Participate in a Free Community Day Prostate Cancer Screening Clinic", Poster Session presented at the 11<sup>th</sup> International Conference on Cancer Nursing-Building The Future, Oslo, Norway.
  22. **Price, M.M.** (2000, August). "Follow-up of Men who Participate in a Free Community Day Prostate Cancer Screening Clinic" and Generational Influences on Cervical Cancer

- Screening”, Papers presented at the National Black Nurses Convention, Washington, DC
23. **Price, M.M.** (2000, September). “Gynecologic Cancers”, Paper presented at the National Astra Zeneca Challenge Conference for Oncology Nurses, Atlanta.
  24. **Price, M.M.** (2000, November). “Free Community Prostate Cancer Screening: Who Attends and Why?”, Paper presented at the American Public Health Association Annual Convention, Boston. Published Abstract – Session 4018.0 p. 202.
  25. **Price, M.M.** (2001, February 16). “Free Community Prostate Cancer Screening: Who Attends and Why?” Poster Session presented at the Annual School of Public Health Minority Health Conference, University of North Carolina, Chapel Hill.
  26. **Price, M.M.** (2001, September). “Free Community Prostate Cancer Screening: Who Attends and Why”, Paper presented at the Biennial Conference of the Center for Disease Control and Prevention (CDC), Using Science to Build Comprehensive Cancer Programs: A 2001 Odyssey, Atlanta.
  27. **Price, M.M.** (2001, October). “Lessons Learned From 58 African American Men About Prostate Cancer Screening”, Paper presented at the American Public Health Association Annual Convention, Atlanta.
  28. **Price, M.M.** (2002, June). “Free Community Prostate Cancer Screening in A Small Urban Community”. Poster #1063 presented at the 18<sup>th</sup> Union of International Cancer Congress, Oslo, Norway. Published Abstract, p. 467.
  29. **Price, M.M.** (2002, August). “Prostate Cancer Screening – Who Attends and Why”. Podium presentation at the 12<sup>th</sup> International Conference on Cancer Nursing 2002: Making A Difference, London. Published Abstract, p. 28.
  30. **Price, M.M. & Robertson, C.N.** (2002, September). “Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics”. Poster presentation at the Ninth Annual CapCure Scientific Retreat Program, Washington, D.C.
  31. **Price, M.M., Powe, B.D., & Underwood, S.M.** (2003, March). Symposium 22 “From Research to Practice to Policy: Designing Research-Based Interventions Focused on Cancer Prevention and Control Among African-Americans”. 24<sup>th</sup> Annual Meeting and Scientific Sessions for the Society of Behavioral Medicine, Salt Lake City, Utah.
  32. **Price, M.M.** (2003, October). “Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics in Durham, North Carolina” Sixth Annual Sigma Theta Tau Research Day Conference: Health Disparities in Underserved Minority Populations from a Global Perspective. North Carolina A&T State University School of Nursing, Greensboro, N.C. p.13.
  33. **Price, M.M.** (2003, October). “International Cancer Care Nurses Attitudes about Cervical Cancer Screening” Sixth Annual Sigma Theta Tau Research Day Conference: Health Disparities in Underserved Minority Populations from a Global Perspective. North Carolina A&T State University School of Nursing, Greensboro, N.C. p.24.
  34. **Price, M.M., & Combs, I.** (2003, November 7-9). “How to Use Innovative Health Education and Screening Programs to Promote Health in the African American Community: Durham, North Carolina and Omaha, Nebraska”. Symposium conducted at the 4<sup>th</sup> Annual Institutes of Learning Conference. Oncology Nursing Society, Philadelphia, Published Abstract p. 27-31.
  35. **Price, M.M., Jackson, S.A., & Robertson, C.N.** (2004, March). “Utility of Longitudinal Prostate Specific Antigen Measures in a Screening Population”, Intercultural Cancer Council and Baylor College of Medicine: 9<sup>th</sup> Biennial Symposium on Minorities, The

- Medically Underserved & Cancer, Washington, D.C. Published Abstract p. 37.
36. **Price, M.M.** (August 2004). "International Cancer Care Nurses Attitudes About Cervical Cancer Screening". Podium presentation at the 13<sup>th</sup> International Conference on Cancer Nursing 2004: Celebrating Diversity, Sidney, Australia. Published Abstract p.
  37. **Price, M.M.**, Jackson, S.A., & Robertson, C.N. (2004, November). "Utility of Longitudinal Prostate Specific Antigen Measures in a Screening Population", poster presentation at the 132<sup>nd</sup> Annual Convention of the American Public Health Association, Washington, D.C. Published Abstract p. 37.
  38. **Price, M.M.** (2005, June). "Partnering Mentoring and Education in Prostate Cancer Control", Cancer Prevention and Detection Dissemination Colloquium, invited, podium presentation as outcome of the NCI and Oncology Nursing Society grant collaboration, Chicago.
  38. **Price, M.M.**, Robertson, C.N. & Jackson, S.A., (2006, March). "Longitudinal Variation in Prostate-Specific Antigen Levels in a Screening Population". Poster presentation at the 70<sup>th</sup> Annual Meeting of the Southeastern Section, American Urological Association, Inc, Rio Grande, Puerto Rico, Published Abstract p. 110.
  39. **Price, M.M.**, Robertson, C.N. & Jackson, S.A., (2006, March). "Longitudinal Variation in Prostate-Specific Antigen Levels in a Screening Population". Poster presentation, Duke University Medical Center Comprehensive Cancer Center Annual Meeting, Published Abstract p. 137.
  40. **Price, M.M.** (2006, March). "Intergenerational Influences on Cervical Cancer Screening in African American Women in Eastern North Carolina", Poster presentation, Duke University Medical Center Comprehensive Cancer Center Annual Meeting, Published Abstract p. 138.
  41. Echols, P. & **Price, M.M.** (2006, April). "The Association of Race on Prostatic Specific Antigen (PSA) Velocity and PSA Doubling Time Prior and Post Radical Prostatectomy", Podium presentation, Intercultural Cancer Council-10<sup>th</sup> Biennial Symposium on Minorities, the Medically Underserved and Cancer, Baylor College of Medicine-Houston, TX, held in Washington, D.C.
  42. **Price, M.M.** & Robertson, C.N. (2006, March). "Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics". Poster presentation, Duke University Medical Center Comprehensive Cancer Center Annual Meeting, Published Abstract p. 139.
  43. **Price, M.M.** (2006, June). "Prostate Cancer Screening: Coming to Terms with Controversies". Podium presentation, American Academy of Nurse Practitioners, 21<sup>st</sup> National Conference, Dallas, Texas.
  44. **Price, M.M.** (2007, June). "Latest Developments in HPV-related diseases and Cervical Cancer ". Podium presentation, American Academy of Nurse Practitioners, 22<sup>st</sup> National Conference, Indianapolis.
  45. **Price, M.M.** (2007, June). "Prostate Cancer Screening: What Will We Tell Our Patients?". Podium presentation, American Academy of Nurse Practitioners, 22<sup>st</sup> National Conference, Indianapolis.
  46. Williams, R., Schroeck, F.R., Bryan, K.A. N., **Price, M.**, Sun, L., and Moul, J.W. "Clinical and Pathological Variables: Predictors of PSA Recurrence after Radical Prostatectomy". 9th Annual Surgical Urologic Oncology Meeting, Natcher Conference Center, National Institutes of Health, Bethesda, December 4-5, 2008.

47. Bryan, KA.N., Florian, S.R., Willams, R., **Price, M.**, Sun, L., and Moul, J.W.  
“Independent predictors for PSA recurrence after radical prostatectomy: Gleason score 3+4 versus 4+3 and percent tumor involvement”. Podium presentation, Southeastern Section American Urological Association 72nd Annual Meeting, San Diego, March 2008.
  48. Schroeck, F.R., Krupski, T. L., Sun, L., Albala, D. M. Albala, **Price, M.M.**, Polascik, T. J., Robertson, C.N., Tewari, A. K., and Moul, J.W.  
“Predictors for satisfaction and regret after three different types of radical prostatectomy”. Poster presentation, Duke University Medical Center Annual Cancer Symposium, March 12, 2008.
  49. Bannister, M., Mouraviev, V., **Price, M.**, Mayes, J., Jackson, S., Tyson, D., Wilson, A., and Polascik, T. “ProstaScint: What Will We Tell Our Patients?” Duke University Medical Center Annual Cancer Center Symposium, Durham, March 12, 2008.
  50. Tolbert-Warren, C., Buschemeyer, C., Klink, J., Mavropoulos, J., Banež, L., Jaychadran, J., Johnson, T., Poulton, S., Hursting, S., **Price, M.**, and Freedland, S.. “Effect of Intermittent Caloric Restriction on Prostate Cancer Growth and Survival in Mice”. Duke University Medical Center Annual Cancer Center Symposium, Durham, March 12, 2008.
  51. Jackson, S.A., **Price, M. M.**, Robertson, C.N, and Smith, R. “Predictors of Sustained Participation in Prostate Cancer Screening Programs”, Intercultural Cancer Conference, Baylor University, held in Washington, DC, April 3-6, 2008.
  52. Williams, R., Schroeck, F.R., Bryan, KA. N., **Price, M.**, Sun, L., and Moul, J.W.  
“Clinical and Pathological Variables: Predictors of PSA Recurrence after Radical Prostatectomy”. Intercultural Cancer Conference, Baylor University, held in Washington, DC, April 3-6, 2008.
  53. Koontz, B. F., Wright, T., **Price, M.**, Polascik, T. J., Mayes, J. M., Wong, T. Z., Madden, J., & Mouraviev, V. (2008, May). “Indium Capromab Pendetide Scintigraphic Imaging prior to Surgical Management of Prostate Cancer”. Poster presentation, American Urological Association Annual Meeting, Orlando, Fl. May 17-22, 2008. Tracking Number: 08-AB-95342-AUA.
  54. **Price, M.** ,“Human Papillomavirus (HPV) And HPV Vaccines: A Global Update. 15th International Conference on Cancer Nursing, The Suntec Singapore International Convention & Exhibition Centre Singapore, August 17-21, 2008. Oral abstract #0-022.
- c. Editorials, position, and background papers: n/a

Consultant appointments: (Include US government, state, private organizations, etc.)

**Organizations and participation (regional and local):**

Professional awards and special recognitions:

- |           |  |
|-----------|--|
| 1993      | Great 100 Award For Nursing Excellence In North Carolina for Outstanding Contributions to the Profession of Nursing    |
| 1995-1996 | Albert Schweitzer Fellowship   |
| 1995-1997 | Lineberger Comprehensive Cancer Center, University of North Carolina, Pre-Doctoral Fellowship                          |
| 1995      | American Nurses Association Ethnic Minority Fellowship, accepted without funding                                       |
| 1996      | Alumni Student Award, UNC School of Public Health, awarded at the UNC School of Public Health Annual Alumni Conference |

1997	Community Health Nurse of the Year, North Carolina Nurses Association
2002-present	Invited and Inducted, Fellow, American Academy of Nursing
2005	American Academy of Nurse Practitioners State Award for Excellence
2007	Invited and inducted, Fellow of the American Academy of Nurse Practitioners

<b>Organization</b>	<b>Office held and/or Committee Assignment</b>	<b>Dates</b>
Union of International Cancer Congress Nursing Committee, Geneva, Switzerland. Congress, Oslo, Norway	<b><u>International:</u></b> Member	2002-2003
International Society of Nurses in Cancer Care (ISNCC)	Member	2002-2004
American Public Health Association	<b><u>National:</u></b> Member	1974-present
American Nurses Association	Member	1974-2002
National Black Nurses Association (local chapter: Central Carolina Black Nurses Association)	Member	1978-2004
American Social Health Association, RTP, NC, National Cervical Cancer and Human Papilloma Virus Project	Member Scientific Advisory Board Member	1998-2004
Oncology Nursing Society ONS National Challenge Conference, Conference held in Atlanta, September 14-17, 2000	Member 10 member committee from across the U.S. charged with planning a community outreach course on cancer screening and detection for 300 oncology nurses	1995-present January-August 2000
Invitational for Best 100 Oncology Nurse Community Outreach Cancer Prevention and Early Detection Programs, held in Washington, D.C., April 20, 2002	Committee Member for participant follow up and to plan a reunion luncheon and poster session	January – April 2002
National Association of Nurse Practitioner Faculties (NONPF)-.	Member Member, Clinical Doctorate Task Force, National Organization of Nurse Practitioner Faculties (NONPF) Chair, subcommittee on Faculty Qualifications, Faculty Development, and Student Admissions Criteria	1997-2004 2006-
National The Susan G. Komen Breast Cancer Foundation Governor's 12 member	Member, African American Advisory Council <b><u>State:</u></b>	2005- 1994; serving 4 <sup>rd</sup>

<b>Organization</b>	<b>Office held and/or Committee Assignment</b>	<b>Dates</b>
Commission for Health Service (Public Health Commission), Raleigh. Quarterly meetings.	Member, the Public Health Commission writes the rules for all legislation passed by the North Carolina General Assembly including environmental and personal health legislation, immunization laws, restaurant and lodging grading standards, childcare facility, food establishment grading standards, HIV, smallpox, other communicable disease control.	term; Gubernatorial appointment
North Carolina Health and Human Services, Department of Health, Breast and Cervical Cancer Assurance Committee	Chair, Evaluation and improvement of cancer screening services (clinical, laboratory, and radiological) for women in private and public sector clinics	1995-1997
The Albert Schweitzer Foundation; fellow interview and selection annually in March; fellowship mentorship, and guidance in seminar development; meetings once a year, Duke School of Nursing student mentoring.	Member, Board of Advisors and Fellowship selection subcommittee. The Foundation provides paid fellowships for community service learning projects conducted by medical, dental, nursing, veterinarian, and law graduate and professional students across North Carolina universities with major medical centers.	2000-present
Old North State Medical Society, Raleigh-Durham Chapter	Member	2001-2002
North Carolina Nurses Association (formerly District Eleven)	Member; Secretary for Triangle Region; Commission on Standards and Practice	1975-present 1985-1987 2001-2003
North Carolina Nurses Association	Participant, North Carolina Nurses Association Leadership Day	January 2000
North Carolina Nurses Association	Participant, Awards Selection Committee for Outstanding Nursing Leadership and Service	January 2000-2001
North Carolina Nurses Association	Commission on Standards and Practice	2001-2003
University of North Carolina School of Public Health, Department of Maternal and Child Health, participated in review of candidates for	Member, Advisory Board	February 2003



<b>Organization</b>	<b>Office held and/or Committee Assignment</b>	<b>Dates</b>
department chair; annual board meetings		
U.S. Army Department of Defense	IMPACT Technical Committee to plan the first national Prostate Cancer Research Conference	2006-2007
Piedmont Health Care, Inc. Federally funded primary care centers in three rural North Carolina counties	<u>Local:</u> Member, Board of Directors	1986-1987
Chatham County Board of Health	Chair	1993-1994
	Board Member	1989-2000
Copernicus Group Independent (International) Review Board, Inc. Cary, NC	Member	2001-2004
Orange-Chatham-Person Developmental Disabilities and Mental Health Authority (Mental Health Board), monthly meetings	Member, official certifier for Board proceedings	2001-2004, County Commissioners Appointment
Carolina Meadows Retirement Community, a 700 resident continuing care retirement community, meetings four times a year	Executive Board and Health Committee member	2004-2008

**Editorial Boards: n/a**

**Review Panels:**

U.S. Army Department of Defense, Integration Panel for Prostate Cancer, Ad hoc panel member to determine the funding level for scored grant proposals from the \$80 million+ budget for prostate cancer scientific research, 2002, 2003, & 2007.

<b>PI</b>	<b>% Effort</b>	<b>Purpose</b>	<b>Amount</b>	<b>Duration</b>
PRESENT	15%	Collaboration Around Research and Education (CARE) in Prostate Cancer with Bennett College, Greensboro, N.C. to provide beginning prostate cancer	Funding	cycle 2007-2009
Principal Investigator, U.S. Army Department of Defense				

		education to 12 undergraduate science (biology) students over three years.		
PRESENT	20%	Partnering Research Involving Mentoring and Education (PRIME) in Prostate Cancer Training Grant with North Carolina Central University to provide beginning prostate cancer education to 12 undergraduate nursing students over three years.	Funding	cycle 2005-2008
Principal Investigator, U.S. Army Department of Defense				
Principal Investigator, U.S. Army Department of Defense (Co-PI Mentor: Cary Robertson, M.D., DUMC)	47%	Prostate Cancer Screening, Health Disparity Research-Prostate Scholar Award: Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics Mentor: Cary Robertson, M.D.  Scientific Mentor: Paul Godley, M.D., Ph.D., Surgical Oncologist, Attend monthly seminars in Methods in Health Disparity Research, cosponsored by the Cecil Sheps Center, UNC School of Public Health; and Lineberger Comp. Cancer Center.	Funding	cycle 2002-2006
PI, Cervical Cancer Screening, International Nurses Survey		Attitudes and Practices for Cervical Cancer Screening Among International Nurses in Cancer Care. Surveys conducted at the UICC Congress, Oslo, Norway, June-July 2002 & the International Nurses in Cancer Care, London, August-September 2002	District Eleven, North Carolina Nurses Association	June 2002-June 2003

PI, Department of Defense	30%	Using a Tracking System to Improve Prostate Cancer Screening Follow-up in a Small Urban	2000-2001
PI, Avon-NABCO, Inc	25%	Breast Cancer Access Grant for Nurse Practitioners in Nine-County Area in Southeastern North Carolina	October 1997-98
PI, (Pre-doctoral Fellow), NCI sponsored Cancer Control Education Research Program (CCEP)	45%	Intergenerational Influences on Cervical Cancer Screening	1995-1996
University of North Carolina Lineberger Comprehensive Cancer Center, Training Grant –CA64060		Dissertation Research	Renewed 1996-97
PI, Association of School of Public Health and The Association of Teachers of Preventive Medicine, National Center for Infectious Disease, Division of HIV/AIDS, Surveillance Branch, CDC, Atlanta		Protocol Development for Resource Assessment of HIV+ pregnant women's access and use of AZT and other social and medical resources	1994-1995

Doctorate of Nursing Practice Admissions Director, School of Nursing, Duke University, Durham, 2008-.

Appointment, Duke University Comprehensive Cancer Center, Department of Cancer Control and Prevention, 2003.

Duke IRB #6, 2004- 2007 Departmental Reviews.

Acting Program Director, Oncology Nursing Curriculum, Fall 1999 to August 2000.

Assistant Professor, School of Nursing, Duke University, Durham. 8/1996-.  
Master of Nursing Family Nurse Practitioner Specialty Director, 2002 -2007.

## 2005 Student Abstracts

### **Positive Surgical Margins Association with Prostate Cancer Reoccurrence**

Sheree Boykin

**Background:** Previous studies of surgical management in prostate cancer have found that “surgical margin status is an independent predictor of prostate specific antigen (PSA) recurrence and secondary cancer treatment in patients.” Few studies have examined the relationship between recurrence and race of the patient.

**Rationale:** This purpose of this study was to find how a positive surgical margin is associated with prostate reoccurrence in different races and age groups. We were particularly interested in prostate cancer recurrence in African Americans. If there is a difference, surgical timing and approaches might be examined differently.

**Purpose:** African Americans above the age of 60 often are more likely to have a PSA value of greater than 0.2 after surgery. 0.2 was used in this study as a reoccurrence indicator. PSA recurrence was defined as PSA 0.2 or greater on 2 consecutive occasions after radical prostatectomy.

**Methods:** The data of about 300 men who had a biopsy or a prostatectomy between 1997 and 2005 was used. These reports contained the patient’s age, race, PSA values, surgical margins, and surgical data. The men were between the ages of 48-80, and consisted of African Americans, Caucasians, Asians, American Indians, Pacific Islanders, and Unknown. The data was collected and entered into Dr. Sun’s database. The data was then analyzed in Microsoft access and excel.

**Results:** There was not enough significance in the findings to show a definite association between surgical margin status as an independent predictor of prostate specific antigen (PSA) rise to predict recurrence. The p value was .309.

**Implications:** The findings support that African American men between the ages of 50 to 60 were more likely to have a reoccurrence but the findings did not have significance. Further study needs to compare the positive surgical margins, T stage, and PSA values.

## **The Association of Race on Prostatic Specific Antigen (PSA) Velocity and PSA Doubling Time Prior and Post Radical Prostatectomy**

Phylicia Echols

**Goal:** To understand PSA values and prostate cancer development

**Objective:** To compare racial influence on PSA Velocity (PSAV) and PSA Doubling Time (PSAD).

**Background:** African American men are known to have earlier onset of prostate cancer (Pca), higher PSA values at diagnosis, and more advanced presentations of prostate cancer. Research has identified elevated prostate-specific antigen (PSA) levels and rates of change in PSA levels between consecutive visits as early clinical markers for Pca development. A PSAV higher than 0.75 ng/ml/yr is associated with a higher probability of Pca development; secondly, a PSAD less than 12 years is also predictive of increased risk for Pca development.

**Rationale:** Knowledge of rate of change of the PSA is valuable for clinicians and advanced practice nurses to appropriately counsel their patients on the frequency of routine screening for Pca, and implications for the test results.

**Methods:** My data set included pathology results from biopsies of 357 men suspicious for Pca who had undergone radical prostatectomy. Exclusion criteria were determined with a resultant sample of 149. This included 118 Caucasians, 20 African Americans, 1 Asian, 1 American Indian, and 9 race unknown. All of the biopsy procedures were done between 1997 and 2005 at Duke University Medical Center in Durham, North Carolina. Records from the Microsoft Access data base were accessed using the Duke University eBrowser to access my mentor, Dr. Leon Sun's Pca database. Microsoft Excel was used to analyze my data.

**Results:** Caucasian patients had a higher average PSAV (27.67 ng/ml/yr) before surgery. African American men had a higher average PSAV (1767.89 ng/ml/yr) post surgery. Caucasian men had a lower average PSAD (0.94) before surgery and the African Americans had a lower average PSAD (0.52) post surgery. Data analysis found that a higher PSAV or lower PSAD are indicators of a higher mortality rate or lower chance of surviving Pca. African American men had a higher PSAV prior to the radical prostatectomy but ended up having the lower PSAD afterwards.

**Implications:** PSAV and PSAD should be watched more carefully by clinicians for early informed discussions about prostate cancer screening, especially among African American men.

## **The Epidemiology of Prostatic Biopsies and Prostate Cancer Detection**

Taylor Ferguson

**Goal:** To explore factors related to earlier diagnosis of prostate cancer

**Objective:** To understand the relationship between the first biopsy and prostate cancer diagnosis

**Background:** It is a well known that African American men are at higher risk for prostate cancer than any other ethnic group. Recognizing that there is controversy by various health care organizations, there are studies that support African American men getting tested for prostate cancer at an earlier age, 40, than most ethnic groups. Suspected risk factors for prostate cancer include age, income, educational status, knowledge of prostate cancer, marital status, and even social status. These risk factors may be involved in the detection and prevention of prostate cancer.

**Purpose:** The purpose of this research is to determine which specific race and age group has a higher incidence of prostate cancer detection on the first biopsy.

**Methods:** My data set included pathology results from biopsies of 339 men of different races and ages. Patients were excluded if their age or race was unknown. All of the biopsy procedures were done between 1997 and 2005 at Duke University Medical Center in Durham, North Carolina. Records from the Microsoft Access data base were access using the Duke University eBrowser to access my mentor, Dr. Leon Sun's prostate cancer database. Microsoft Excel was used to analyze my data.

**Results:** My results show that there were 16 Caucasian men and 14 African American who were diagnosed with prostate cancer after their first biopsy. During my research, I found that among Caucasian patients who were between the ages of 50 to 70 there was a higher incidence of prostate cancer detected on the first biopsy.

**Implications:** In conclusion, my research showed that among Caucasian men in the database, more men between the ages of 60 and 70 had their prostate cancer detected after the first biopsy. This research will lead to knowledge about racial and age groups differences and early identification of prostate cancer by biopsy.

## **Genetics, Age, Race, Body Size, and IGFs: How Do They Relate to Prostate Cancer?**

Princess Killen

**Background:** Prostate cancer (Pca) causes more than 40,000 deaths annually, with excess deaths among African American men. Risk factors linked to the development of Pca include genetics, body size, race, and age. The biological plausibility is less well understood.

**Rationale:** Defining how circulating levels of IGF-1 and IGFBP-3 might be contributing to the pathogenesis of Pca as one of the possible pathway through which known risk factors affect Pca need further investigation.

**Purpose:** The purpose of this literature review was to examine current and recent scientific literature which has examined the Pca and IGF relationship.

**Methods:** A comprehensive literature search was conducted to identify epidemiologic studies that examined genetics, age, race, and body size in relation to IGF-I and IGFBP-3. A computerized search of human studies and English language publications was performed through June 2005 using Ovid and Pub-Med online databases as well as manual searches.

**Results:** 11 out of 16 articles showed an association between genetics, age, race, or body size and levels of IGFs. It is known that the levels of IGF-1 can influence anti-apoptosis and cell proliferation. If there is an increase in the activity of either of these processes it could be harmful. If this is true then IGF may be a pathway through which these risk factors leads to Pca.

**Implications:** These findings suggest that polymorphism in growth related genes, older age, black race, and larger body size may be associated with the development of Pca. These analyses require confirmation in larger study population. The rate of Pca may decrease with interventions based on understanding of the IGF relationship to Pca development employed in the clinical setting.

## **The Quality Of Life After A Prostatectomy**

Keesha Moore

**Goal:** To understand quality of life after prostatectomy surgery

**Objectives:** To explore patient and family concerns in the post operative period following a prostatectomy

**Background:** Being diagnosed with prostate cancer and undergoing a prostatectomy can present physical and emotional turmoil on a patient and his family. After a prostatectomy there are many complications that may arise with cancer treatment; incontinence, erectile dysfunction, and a rising PSA.

**Rationale:** Understanding the prostatectomy complications and how the surgical procedure can affect an individual and his family's quality of life, can lead to improved anticipatory guidance and expectations following the procedure.

**Purpose:** The purpose of this qualitative exploration was to promote discussion and identification of the symptoms and side effects experienced following a prostatectomy. In this pilot study, 10 patients who had undergone a radical prostatectomy at Duke University Medical Center were sent a five-question survey.

**Method:** I spent a 10-week mentorship shadowing my physician mentor in the urology clinic. A large number of patients in the clinic had undergone a prostatectomy following a diagnosis of prostate cancer. I developed a brief questionnaire using topic areas expressed in the follow up visit as common day-to-day complications and problems after a prostatectomy. The survey addressed issues most often faced by patients who have undergone a prostatectomy. The survey was randomly given during clinic sessions in one week to seven of 10 men who consented to complete the survey. The survey was analyzed exploring predominate themes in their symptom descriptions.

**Results:** A PSA value had risen post-surgery in one patient. Two patients' post surgery findings included complications of inability to achieve an erection, and one patient developed incontinence. On the other hand, six patients reported incontinence, erectile dysfunction, and one of the seven had a rising PSA value, but all seven found these surgery outcomes less worrisome, and they did not produce a negative effect on their quality of life post-surgery.

**Implications:** Ability to recognize and discuss prostatectomy side effects provides an opportunity for men and their families to receive anticipatory counseling to problems that may influence the quality of life following the surgery.



2006 Student Abstracts

**Association Between Inflammatory Markers and Prostate Carcinogenesis:  
A Meta-Analytic Review**

Shunyoung Smith, B.A.

**Background:** Several inflammatory markers are associated with the diagnosis and progression of prostate cancer, but little has been researched regarding the role of inflammation in the actual development of prostate cancer.

**Purpose:** The purpose of this study is to investigate the link between inflammatory markers and prostate cancer.

**Hypothesis:** Elevated levels of certain inflammatory markers are associated with prostate cancer.

**Methods:** An exhaustive literature review was performed using a medical research library, as well as online databases (including PubMed). A meta-analysis was performed to provide an estimate of the magnitude of the effect of inflammatory markers on prostate carcinogenesis.

**Results:** The meta-analysis indicated a fixed effects odds ratio of 1.07 ( $p = 0.19$ ) for the overall effect of inflammatory markers on prostate cancer. The random effects odds ratio approached significance at 1.19 ( $p = 0.08$ ). The trend toward significance indicates that inflammatory markers may be associated with prostate carcinogenesis. In a moderator test for the specific type of marker associated with prostate cancer, Leptin was found to be directly associated with prostate carcinogenesis, with an odds ratio of 1.66,  $p < .001$ .

**Discussion:** Inflammatory markers are associated with the onset and progression of prostate cancer. With more research, a more extensive study can be performed in order to identify the effect of inflammatory markers. For example, exploring the inflammatory marker Leptin on the gene level will be beneficial to research in terms of prevention and treatment.

## Comorbid Medical Conditions and Post-Treatment Quality of Life in African American Prostate Cancer Survivors

Ashton C. Fearington

**Background:** African American prostate cancer survivors report more comorbid medical conditions than Caucasian prostate cancer survivors. However, little is known about how comorbid medical status relates to the post-treatment symptom experience of African American prostate cancer survivors. Given that prostate cancer survivors must often contend with multiple symptoms following treatment (e.g. sexual, urinary, bowel symptoms), having a comorbid medical condition may reduce quality of life. **Purpose:** This project examined the relationship between comorbid medical conditions and quality of life as indicated by sexual, urinary, bowel, and hormonal symptoms in African American prostate cancer survivors. **Methods:** Participants were 40 African American prostate cancer survivors ( $M_{age} = 61.4$  years) who were past the acute treatment and recovery phase of their prostate cancer treatment. Participants completed a demographic questionnaire and the Expanded Prostate Cancer Index, a measure of quality of life related to sexual, urinary, bowel, and hormonal symptoms. Analysis of Covariance was used to examine symptom-related quality of life in men without comorbid conditions as compared to men with 1 or more comorbid medical conditions. **Results:** Fifteen men (37.5 %) reported no comorbidities and 25 men (62.5 %) reported 1 or more comorbidities. The most frequent comorbid conditions were circulation problems in legs/feet (22.5%), breathing problems such as asthma or emphysema (22.5%), and stomach ulcer or irritable bowels (22.5%). Age was positively correlated with number of comorbid conditions; therefore, age was used as a covariate in the ANCOVA. Men with comorbid medical conditions reported lower quality of life with regard to bowel function ( $F_{[2,37]} = 6.51, p = .015$ ), bowel bother ( $F_{[2,37]} = 9.69, p = .004$ ), and overall quality of life related to bowel symptoms ( $F_{[2,37]} = 9.76, p = .003$ ), than men with no comorbid medical conditions. Men with comorbid medical conditions also reported lower quality of life in regard to hormonal bother ( $F_{[2,37]} = 12.58, p = .001$ ) and overall hormonal quality of life ( $F_{[2,37]} = 8.25, p = .007$ ), than men with no comorbid medical conditions. **Implications:** Prostate cancer survivors with comorbid medical conditions reported significantly lower quality of life related to bowel and hormonal symptoms follow prostate cancer treatment. These findings suggest that post-quality treatment quality of life in African American prostate cancer survivors is linked to overall physical health. Management of comorbid disease may help improve prostate cancer-related quality of life in these survivors.

# **The Differences between African-Americans and Non-African Americans With Regard to Prostate Specific Antigen From The PSA Era to Present**

Kenneth C. Joseph, B.A.

**Background:** African –American (AA) men have been disproportionately affected by prostate cancer (CaP). This study serves to examine the trends in CaP presentation from the beginning of the PSA Era (1988) to present. Differences in the range of PSA levels between the AA group and the Non-AA group were also examined.

**Methods:** Subjects in the study were taken from 14,908 patients in the Duke Prostate Cancer Database. Patients younger than 50 years of age or with unknown race were omitted. The final sample size was 10,527. The racial groups compared were AA-men and Non-AA-men including Caucasian, Latinos, and Asians.

**Results:** The results showed that AA–men had much higher PSA levels than Non-AA men during the earlier years. The range of PSA levels within the groups was greater in AA-men (8-36.7 ng/ml) than Non-AA-men (4.7-17.6 ng/ml). The range in PSA levels has been decreasing steadily within the racial groups from 1988 to present. The disparity in PSA levels between the groups of AA-men and Non-AA-men has been declining steadily over time.

**Discussion:** The amount of the disparity has been declining in the more recent years as screening in AA men now occurs at earlier ages.

# **The Effects of Age and Race on Gleason Score and Tumor Stage**

Alisha Childs

**Background:** It is suggested by many that race and age play a large role in both tumor stage and Gleason score of prostate cancer while some studies suggest that there is no relationship.

**Purpose:** The current study evaluated the effects of age and/or race on the Gleason score and tumor stage of prostate cancer.

**Hypothesis:** Both age and race will affect Gleason score and tumor stage based on the analysis of patient records.

**Methods:** Records were obtained for 14,908 patients from the Duke Prostate Cancer Database. Among them, 4581 men received a radical prostatectomy between 1988 and 2006. The data used in this study included those who received a radical prostatectomy between 2000 and 2006. The exclusion criteria included the following: those under age 50, those who received a biopsy, and those with unreported variables such as race. After exclusions were made, the data consisted of 143 African American (AA) men and 759 non-African American (AA) men. These men were divided into the following age groups: those in their 50's, 60's, 70's, and men over 70.

**Results:** Over 60% of AA men diagnosed had a Gleason score  $\geq 7$  regardless of age. Non-AA men did not present a difference in their Gleason scores by age. AA men were more likely to be diagnosed at T3/4 stage compared to non-AA who had a higher percentage of those diagnosed at T2. Also, it was suggested that over 80% of non-AA men had surgery, while less than 17% of AA men chose surgery. With Gleason score, more AA men were diagnosed with a Gleason score  $\geq 7$ . Non-AA participants did not present difference in Gleason score across age.

**Discussion:** Race, rather than age is associated with Gleason score. The majority of non-AA men were diagnosed with a less severe T2 stage. AA men have a higher percentage of T3/4 state and high Gleason scores, indicating that their cancer would grow and spread more rapidly compared to non-AA men.

## 2007 Student Abstracts

### **ProstaScint- The New Wave of Prostate Cancer Detection**

Michael Bannister

**Background:** The ProstaScint program has recently emerged as a prostate cancer detection and imaging system. Combining the qualities of a CT and PET Scan, ProstaScint locates tumors and metastases in the prostate and surrounding tissue (seminal vesicles). Marked efficiency of this scanning system can reduce the need for prostate and seminal vesicle biopsies. To date, the efficiency of ProstaScint to these other techniques has not been empirically tested.

**Purpose:** The purpose of this study is to compare the accuracy of the ProstaScint program to the actual seminal vesicle and prostate biopsies performed by urologic surgeons. It is hypothesized that ProstaScint will more accurately identify the location of cancer tumors and spreading of cancer in comparison to prostate and seminal vesicle biopsies.

**Methods:** A sample of 69 patients were selected according to the following criteria: 1) they failed radiation treatment and 2) they received a ProstaScint scan before a prostate/seminal vesicle biopsy. After these critical inclusion criteria were met, the population was reduced to 22 patients. Additional observed patient characteristics included PSA values before biopsies, Gleason scores, MRI results, and biopsy results of the prostate and seminal vesicles. Data were analyzed using crosstabs in SPSS comparing the results (positive or negative) of ProstaScint scans to seminal vesicle biopsies.

**Results:** The ProstaScint program proves to be an extremely accurate scan. The Negative Predictive Value (N.P.V.) was 92%, indicating that if a patient received a ProstaScint scan and the results were negative, the cancer was not present within the seminal vesicles or prostate 92% of the time. The Positive Predictive Value (P.P.V.) was 50%, indicating that when patients received a positive ProstaScint scan, cancer was present within the seminal vesicles or prostate up to 50% of the time.

**Conclusion:** In this study, ProstaScint demonstrates high accuracy in detecting the absence of prostate cancer. These findings are particularly beneficial for prostate cancer patients as negative scan results are accurate 92% of the time, indicating that the cancer is gone. However, since the P.P.V. is only 50%, patients who receive negative scan results should have another diagnostic scan, such as a MRI, to check the validity of the ProstaScint scan. Since ProstaScint is a recent technique for tumor imaging, more studies need to be performed to confirm the accuracy of this program. Studies with larger populations need to be conducted to assess the N.P.V. and P.P.V. of the scan.

**Impact:** This study could potentially have a large impact on prostate cancer mortality through the treatment of metastases. If the ProstaScint program could be perfected, then physicians would be better able to assess the aggressiveness and the location of the cancer,

and the patients would spend less time in the hospital and other healthcare facilities due to the accuracy of the ProstaScint program.

## **Do RECIST or WHO Criteria Give a More Accurate Assessment of Treatment Response in Solid Tumors?**

Sharhonda Harvey

**Background:** Tumor response is often the main objective in clinical trials when evaluating the effects of anti-cancer treatment. The two methods that have been used to measure tumor response in clinical trials are World Health Organization (WHO) and Response Evaluation Criteria in Solid Tumors (RECIST).

**Purpose:** The purpose of this review is to show the advantages and disadvantages of each method and compare objective tumor response to determine which method is more accurate.

**Methods:** First, a literature review was conducted using PubMed and MEDLINE databases to identify studies that compared WHO and RECIST objective tumor response. Second, interviews were conducted with two physicians at Duke University Medical Center who have experience using RECIST criteria. Third, a clinical trial comparing WHO and RECIST was reviewed to compare the efficacy of the response criteria across various types of cancer.

**Results:** The literature review revealed that the new RECIST criteria are a simplified version of the WHO criteria, however RECIST demonstrates concordance with modern technological advances such as Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) scans. The interviews that were conducted suggest that in reference to prostate cancer neither WHO nor RECIST are beneficial, because neither criteria can measure bone metastases or Prostate-specific antigen (PSA) values. WHO and RECIST are radiographic measures, while PSA is a biochemical measurement. These two components are very important in determining the progression of prostate cancer. Finally, the clinical trial suggests that both WHO and RECIST criteria are comparable.

**Conclusion:** After reviewing the evidence, it was found that WHO and RECIST criteria are comparable in assessing tumor response in solid tumors. However, RECIST criteria are not as useful in assessing treatment response in prostate cancer because other factors such as bone metastasis and PSA need to be considered, and perhaps a new method of measuring tumor response for bone metastases should be explored.

## **Why Can't I Drink Grapefruit Juice? The Effects of Grapefruit Juice on Drug Metabolism**

Tynece Buggs

Grapefruit Juice has presented itself as a strong inhibitor of CYP3A4, an enzyme located in the small intestine. CYP3A4 is an enzyme that is pivotal in metabolizing drugs that go through the "first-pass effect." Because of the effect on "first-pass" metabolism, many health care providers inform their patients to eliminate grapefruit juice from their diet. To date, research has been done to show that some statins, antihistamines, calcium channel blockers, psychiatric medications, and immune depressants are affected on different levels by consuming grapefruit juice while taking each of these drugs. All of these reactions can lead to toxic blood levels of the drug and in some cases have led to organ damage or even death. Still, many oncology drugs have not been thoroughly researched. The purpose of this study is to determine if three oncology trial drugs are affected by grapefruit's inhibition of CYP3A4. A literature review was conducted in order to examine the effect of grapefruit juice on oncology drugs. The literature review suggests that grapefruit juice does indeed affect many drugs at even life threatening levels. All three of the tested drugs are metabolized by intestinal CYP3A4, given orally, and have a low bioavailability, making them highly susceptible to being affected by the grapefruit juice inhibition. Still, the level of interaction cannot be determined. However, because of the suggested affect of grapefruit juice on CYP3A4, health care providers should continue to educate their patients of this interaction and suggest that grapefruit juice be eliminated from their diet while taking certain drugs.

## **Clinical Predictors for Positive Prostate Biopsies**

Shannette Thomas

Extensive research has been conducted to isolate the predictive factors of a positive prostate biopsy; however, clinical data from the Duke Prostate Cancer Center Database has not been used in a study of this nature. The purpose of this study is to determine which of the following are independent predictors of prostate cancer: age, PSA, PSA velocity (PSAV), and race. This study included patients from the Duke Prostate Cancer database. Of 2,642 patients, 538 were excluded due to missing data, leaving a total sample of 2,104 patients. The data were from patients who received a prostate biopsy from 1998 through 2001. Ethnicity was divided into African American (AA) and Non-African American (non-AA) groups. Age in this study were divided into three main groups, men younger than 60 years, men between 60 and 70 years, and men older than 70 years. PSA was grouped as <4 ng/ml, 4-10 ng/ml, 10-20 ng/ml and >20 ng/ml. PSA velocity was divided into the following three groups, <0.4 ng/ml, 0.4-0.75 ng/ml and >0.75 ng/ml. Chi-square tests and Logistic Regression were used to analyze data. The results show that PSA ( $p<0.001$ ) and PSA velocity (PSAV) ( $p<0.001$ ), age ( $p<0.001$ ) and race ( $p<0.001$ ) were all shown to be significant as they relate to prostate

cancer in univariate analysis; PSA ( $p=0.005$ ), PSAV ( $p<0.001$ ), age ( $p=0.008$ ), and race ( $p=0.002$ ). In multivariate analysis, those factors remain significant as well. In conclusion, PSA, PSAV, age, and race are in fact independent predictors of prostate cancer. Impact: This project could potentially have a great impact on the detection and prevention of prostate cancer. If factors are identified as predictors of cancer, detection is possible at earlier stages, and prevention could possibly be more straightforward.



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